

# **MASTER OF SCIENCE IN MANAGEMENT**

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## **ALTERNATIVE HEADQUARTERS SUPPORT FUNDING FOR THEATER SPECIAL OPERATIONS COMMANDS**

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**Master of Science in Management-December 2002**

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The current funding mechanism for theater special operations command (SOC) headquarters support costs is inadequately supported by legal guidance. Existing legislation and policy documents do not formalize theater SOC funding relationships to provide an enforcement tool that ensures the theater SOC can properly resource their headquarters support requirements. Consequently, the ambiguity of this funding mechanism has allowed the theater SOC to develop unique scenarios for financing headquarters support. To remedy this deficiency, this thesis conducts a comparative analysis of current theater SOC headquarters support funding mechanisms and examines three funding alternatives. This thesis concludes the best alternative would mandate that the Services assign separate Program Element (PE) numbers to theater SOC headquarters support in the Future Years Defense Program (FYDP) and distribute theater SOC headquarters support funding through the respective theater combatant commands. In addition, the thesis generates criteria that may be used in preliminary analysis by other commands that face similar funding ambiguities and may need to identify alternative funding mechanisms.

**KEYWORDS:** Theater Special Operations Command, SOC, Headquarters Support Costs, Resource Allocation, Budget Execution

## **MODELING SHIP AIR CONDITIONING MAINTENANCE COSTS USING THE INTEGRATED CONDITION ASSESSMENT SYSTEM**

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The United States Navy operates in seas such as the Arabian Gulf, where water temperatures can exceed 90 degrees and air temperatures surpass 95 degrees. An intuitive link exists between these higher operating temperatures and an increased demand on shipboard Air Conditioning (A/C) plants. Increased plant usage, in turn, causes higher A/C plant maintenance costs. To build an accurate cost model for shipboard Air Conditioning plants, this thesis examines the relationship between seawater temperature, A/C plant run-hours, and A/C plant maintenance costs. Data generated by the Integrated Condition Assessment System (ICAS) were used to test a correlation between these factors for TICONDEROGA, ARLEIGH BURKE, and OLIVER HAZARD PERRY class ships. The results indicate that although seawater temperature is a statistically significant factor in determining A/C plant use, plant use is not a statistically significant driver of maintenance costs. Although the findings discourage further research into this area, the methodology developed for using ICAS data may be applied to other shipboard systems.

**KEYWORDS:** Air Conditioning Plants, Maintenance Costs, Integrated Condition Assessment System, Pearson Correlation, Seawater Temperature, Analysis of Variance

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## **AN ANALYSIS OF FEDERAL HEAD CONTRACTING AUTHORITY (HCA) DECISIONS REGARDING OVERRIDES OF STATUTORY STAYS OF CONTRACT AWARD AND CONTINUED PERFORMANCE RESULTING FROM BID PROTESTS**

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This research examines the Federal agency source selection process within Federal contracting agencies by conducting an analysis of Federal Head Contract Authority (HCA) decisions to override the required statutory stay of contract award and performance, in accordance with the Competition in Contracting Act (CICA) of 1984, resulting from bid protests. This thesis includes an analysis of the Government Accounting Office (GAO) Comptroller General of the United States findings and independent research data with respect to Federal agency decisions concerning suspension of contract award and continued performance resulting from pre-award and post-award bid protests. This research evaluates the effectiveness of the Federal agency source selection process via an analysis of HCA and GAO decisions concerning suspensions of contract awards as a result of pre-award bid protests within the previous seven fiscal years. This research also evaluates HCA and GAO justifications for continued contract performance despite post-award bid protests within the previous seven fiscal years. The objectives are to determine if Federal contracting agency decisions are justified because of the source selection process being executed as designed, and to determine if agency judgments to continue performance are supporting the best needs of the Government. Although the study contained discrepancies between GAO and independent research metrics, the overall data collection and analysis led to a general conclusion that HCA overrides are justified and that the Federal source selection process is functioning as designed. Furthermore, the research led to a general conclusion that protests sustained by the GAO occurred as a result of HCA noncompliance with stated acquisition administrative procedures.

**KEYWORDS:** CICA 1984, Bid Protests, HCA Override, Stay of Award, Stay of Continued Performance, Source Selection, GAO Protest Decisions, Contract Law

## **ANALYZING CURRENT MULTIPLE-AWARD TASK ORDER CONTRACTING PRACTICES AND ITS IMPACT ON COMPETITION, PRICING AND SOCIO-ECONOMIC GOALS**

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Present procurement practices for commercial, commercial-off-the-shelf, and non-developmental products and services take thirty days and sometimes years to procure and deliver to the end user. Federal Government contracting offices spend costly amounts of time advertising the action and preparing formal solicitation documents for each purchase order generated by the end-user. This translates to high administrative cost, high prices and, at times, marginal performance. This research offers alternative procurement practices through a single award indefinite delivery indefinite quantity contract accessed through an advanced electronic system, which is maintained by an in accordance with commercial established practices. Further comparisons are made with the growing popularity of multiple-award contracts as these procurement instruments affect competition, pricing and socio-economic issues.

**KEYWORDS:** Competition, Pricing, Socio-economic Issues, Single Award Indefinite Delivery and Indefinite Quantity Contract, Multiple-Award Task Order Contract, Advanced Electronic System

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## **AN ANALYSIS OF THE TAIL TO TOOTH RATIO AS A MEASURE OF OPERATIONAL READINESS AND MILITARY EXPENDITURE EFFICIENCY**

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The Tail-to-Tooth Ratio (TTR) expresses the relationship between the resources or forces employed to perform the core missions and the resources or infrastructure used to manage and support those forces. Several methods are used in DoD to measure the TTR, all of which attempt to establish an unambiguous boundary between “tail” and “tooth.” Specific cases and examples confirm that such a clear-cut limit does not exist. On the contrary, the definitions of “tail” and “tooth” change with the specific situation, the environment and the timing of the measurement.

The lack of a clear boundary suggests that the relationship between “tail” and “tooth” should not continue to be expressed as a ratio or a mathematical relationship between two numbers, but as a continuum. The “Tail-to-Tooth Continuum” can be represented in more than one dimension in relation to the number of variables used to characterize the position of a specific activity on the continuum.

This new approach focuses on outputs and outcomes and could prevent the unnecessary labeling of costs, allowing management to concentrate on increasing efficiency and reducing the total costs of attaining DoD’s desired outcomes.

**KEYWORDS:** Tail-to-Tooth Ratio, DoD Force Structure, DoD Infrastructure, Tail-to-Tooth Continuum, DoD Tail, DoD Tooth

## **AN ANALYSIS OF THE GOVERNMENT COMMERCIAL PURCHASE CARD WITHIN THE UNITED STATES MARINE CORPS**

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In this thesis, two lossless compression approaches are presented. The Rotational Tree Approach (RTA) is based upon mathematics developed by Fredricksen. RTA uses the rotations associated with binary necklace classes to disperse source bit strings to a forest of Huffman encoding trees. The Indexed Tree Approach (ITA) also uses a Huffman forest, but disperses bit strings via a simpler mechanism based upon the first few bits of each string. For text compression, the RTA is found to be competitive with standard Huffman encoding while ITA is generally superior by a small margin of one to three percent. Both approaches owe their (limited) success to decreased modeling overhead as compared to standard Huffman encoding. Compression results against the Canterbury Corpus test suit and complete Java implementation code are included as appendices.

**KEYWORDS:** Government-wide Commercial Purchase Card, Acquisition

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## **ANALYSIS OF THE DEPARTMENT OF DEFENSE HOMELAND SECURITY SUPPORT ORGANIZATION**

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Implementing U.S. Homeland Security Strategy is probably the most difficult challenge facing the U.S. today. As a result of the Strategy, it is envisioned that many federal, state, local and private organizations will need to develop internal organizations for coordinating support with the Department of Homeland Security. The organization that could potentially have the greatest impact on U.S. Homeland Security Strategy achievement is the Department of Defense. Therefore, it is critical that the Department of Defense design an effective internal organization for supporting the U.S. Homeland Security Strategy and the Department of Homeland Security. This thesis will analyze the Department of Defense's initial efforts in developing its Homeland Security Support organization, and will evaluate its potential effectiveness for supporting the U.S. Homeland Security Strategy. This thesis further seeks to provide a model for organizations to utilize in developing and diagnosing their homeland security support organizations.

**KEYWORDS:** Department of Defense Homeland Security Support Organization, Department of Defense Homeland Security Support, Department of Homeland Security, U.S. Homeland Security, Homeland Security Support Organizations, Transformation, Organizational Systems, Cybernetic Feedback Model

## **SEA JAVELIN: AN ANALYSIS OF NAVAL FORCE PROTECTION ALTERNATIVES**

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The U.S. Navy continues to provide a forward presence, conduct freedom of navigation operations and deploy throughout the world. There exists a very real threat to the vessels and crew of the U.S. Navy; terrorists have proven they are willing and able to use low-cost, high-impact weapons. The Navy needs weapons that are mobile, cost-efficient, easily integrated into the fleet and, most importantly, these weapons are needed immediately. This need, combined with current budgetary considerations, compels us to seek weapons that are ready to be employed into the fleet today. The traditional evolutionary process will not provide a capable weapon in a timely or cost-effective manner. The need and the weapon exist today. That weapon is the Army M98A1 Javelin Anti-Armor Missile.

The goal of this thesis is to: (1) Examine the need for a stand-alone, point-defense weapon to effectively combat the small boat threat while underway in restricted waters as well as in port; (2) Discuss shortfalls of current weapons systems used in the fleet to combat this threat; (3) Identify the suitability of the Javelin to meet that threat; (4) Discuss the potential cost avoidance available to the DoD if such an endeavor was to take place.

**KEYWORDS:** Suicide Boat, Swarm Tactics, Small Boat Attack, Ship Self Defense, Javelin Missile, Point Defense

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## **THE PERFORMANCE OF REDUCTION OF TOTAL OWNERSHIP COST (R-TOC) PILOT PROGRAMS**

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In April 1998, within the initiation of Section 912c studies (PM Oversight of Life Cycle Support), DoD expanded the responsibilities of Program Managers for designing and producing new weapon systems to include more accountability for the TOC of the systems, including O&S (Operation and Support) costs. At a December 1998 DSAC (Defense Systems Affordability Council), each service agreed to provide 10 program names for the 912c study. DoD would continue to track all 30 service pilot programs as R-TOC programs. This thesis analyzes the utilization of Reduction of Total Ownership Costs (R-TOC) pilot programs in DoD Services. It identifies the lessons learned from the R-TOC pilot programs and the obstacles encountered to promote efficient reductions in the Total Ownership Costs of DoD weapon systems. It also makes recommendations for DoD leadership to establish a more efficient R-TOC environment. The conclusion is that the performance of R-TOC is efficient because it forces PMs to consider TOC in their programs, and helps to identify obstacles, and encourages saving initiatives. Although further progress will be captured by blocking the inhibitors identified in Chapter IV, OSD should continue advocating R-TOC.

**KEYWORDS:** Total Ownership Cost, Operation and Support Cost, Cost Savings, Contractor Logistic Support, Total System Performance Responsibility, Reliability

## **AN ANALYSIS OF THE BUDGET FORMULATION AND EXECUTION PROCESS IN UNITED STATES NAVAL DENTAL CENTERS AND PERFORMANCE MEASURE UTILIZATION IN THE PROCESS**

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The purpose of this research is to examine the Planning, Programming, and Budgeting process within the Naval Dental Centers (NDCs) as well as their particular budget formulation and execution procedures. Since there is no extensive work concerning budgeting and Naval Dental Centers, this thesis stands as a small-scale representative of budgetary processes in this small but vital section of the military. Moreover, the lack of dental readiness among personnel of operational commands recently debated in Congress this summer illustrates the critical nature of this topic. To analyze the topic in depth, the following points, among others, concerning budgetary policies of Naval Dental Centers must be examined; how do NDCs fit in the overall budgeting process of the Navy, how NDCs formulate and execute budgets, what are the core missions and which ones are nearly always funded, how do marks and reclaims affect the process, what factors affect the disparity between the funding NDCs request for and what they actually receive, what performance measures are compiled and what role do they play in the budgeting process. The specific goal of this study is to provide prospective NDC comptrollers with the insight into procedures, technicalities, and peculiarities of a Medical Service Corps comptroller's job in a Naval Dental Center command.

**KEYWORDS:** Resources, Budget Formulation, Budget Execution, Strategic Planning, Performance Measures

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## **APPLYING DEPARTMENT OF DEFENSE FINANCIAL STATEMENT GUIDELINES TO THE NAVAL POSTGRADUATE SCHOOL**

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The federal government has focused on better business practices by implementing legislature, such as the Chief Financial Officer's Act of 1990, to initiate requirements for federal agencies to produce auditable financial statements. This thesis reviews the extent to which the Naval Postgraduate School can apply the guidelines for federal financial accounting to its own financial management capabilities. The financial information system capabilities and limitations are explained, showing how NPS accounts for the financial transactions during its operations and how these transactions are captured by the Department of the Navy's primary accounting system. This thesis also evaluates the capabilities of the Standard Accounting and Reporting System (STARS), as it pertains to NPS, and how its reports can be used to create the necessary financial statements described in the financial management regulations for the federal government.

**KEYWORDS:** Chief Financial Officer's Act, Department of Defense, Department of the Navy, Federal Accounting Standards Advisory Board, Financial Reporting, Financial Statements, NPS Financial Information Systems

## **AN ECONOMIC ANALYSIS OF ACQUISITION OPPORTUNITIES FOR THE UNITED STATES DEPARTMENT OF DEFENSE WITHIN THE JAPANESE DEFENSE INDUSTRIAL BASE**

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The Japanese Defense Agency (JDA) and the Japanese Defense Industrial Base (JDIB) are in a transitory period. A recession in the Japanese economy and an increasing requirement for participation by the Japanese military in regional and global venues has placed unprecedented demands on the JDA. The Department of Defense also finds itself in a transformational period where implementation of acquisition reform initiatives is an imperative. Given this environment, this thesis seeks to provide DoD Program Managers with a baseline economic analysis of the Japanese Defense Industry and identify potential synergies in U.S.-Japan acquisition efforts. An exposition of the Japanese Defense Industry's composition and status and a targeted comparison to the U.S. defense firms frames the current acquisition environment. Economic factors at work in U.S.-Japan acquisition efforts are identified through examination of past and current acquisition interfaces such as the FS-X co-development program and the Theater Missile Defense program. Specific and general acquisition opportunities are discussed and an assessment tool for evaluation of collaboration alternatives is proposed. This thesis finds that acquisition opportunities do exist for DoD within the JDIB and optimization of these opportunities can facilitate the DoD's effort to engage in "best-value" acquisition practices.

**KEYWORDS:** Japanese Defense Agency, Japanese Defense Industrial Base, Acquisition, Total Ownership Cost Reduction

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## **A CASE STUDY OF THE APPLICATION OF RELIABILITY CENTERED MAINTENANCE (RCM) IN THE ACQUISITION OF THE ADVANCED AMPHIBIOUS ASSAULT VEHICLE (AAAV)**

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This thesis examined the application of Reliability Centered Maintenance (RCM) in the acquisition of the Marine Corps' Advanced Amphibious Assault Vehicle (AAAV). RCM is referred to throughout various service and DoD wide references, but in the absence of specific guidance on how to apply RCM to an acquisition, the AAAV program provided a unique opportunity to analyze key decisions and results. The research included an examination of the RCM process to include RCM training provided on site at the AAAV program, a review of pertinent program documents, interviews with program representatives, and an analysis of the critical decision to utilize the RCM process. The key findings of the research effort concluded that when RCM is applied to an acquisition with program commitment, the program will gain a greater, more focused understanding of the system and subsystems, than with the traditional Failure Modes and Effects Analysis (FMEA) and Failure Modes, Effects and Criticality Analysis (FMECA). AAAV also demonstrated that RCM benefits were broad and not limited to just maintenance analysis and that these benefits could be gained at any stage of the acquisition. This thesis concludes by recommending that the acquisition community recognize the benefits and institutionalize RCM into the acquisition process.

**KEYWORDS:** Marine Corps Advanced Amphibious Assault Vehicle Program, AAAV, Major Defense Acquisition Programs, Reliability Centered Maintenance

## **COST EFFECTIVENESS ANALYSIS OF THE "SEA TO SWOS" TRAINING INITIATIVE ON THE SURFACE WARFARE OFFICER QUALIFICATION PROCESS**

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The number of Surface Warfare Officers (111Xs) in a wardroom directly affects the combat readiness and effectiveness of a warship today. Preliminary research indicates that the "Sea to SWOS" training initiative is seen to have a positive effect on the amount of time it takes a 116X to attain the 111X designation. The initial qualitative analysis highlights a perceived increase in retention and readiness (combat effectiveness) while the quantitative analysis shows additional costs to the Navy Personnel Command and savings in training costs for the Naval Education and Training Command and OPNAV N76, the Surface Warfare Resource Sponsor.

This thesis examines the cost-effectiveness of the newly established "Sea to SWOS" training transformation on the Surface Warfare Officer qualification process. This initiative leverages shipboard on-the-job training experiences and interactive computer-based training replacing previously formalized classroom training. As a result, this initiative significantly alters the Division Officer Sequencing Plan (DOSP). Based on the qualitative data, the transformation to the DOSP in the Surface Warfare Officer qualification process will most likely have a positive effect on retention and the utilization of fully qualified 111X Division Officer resources through earlier numbers of 111X attainment and increased officer personnel readiness.

**KEYWORDS:** Cost Effectiveness Analysis of Surface Warfare Officer Training, Surface Warfare Training Costs, Streamlining Training, Retention, Surface Warfare Officer

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## **AN ANALYSIS OF THE FACTORS AFFECTING THE NET OPERATING RESULT AT NAVAL AVIATION DEPOT CHERRY POINT, NORTH CAROLINA**

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This thesis explains the current process involved in establishing stabilized rates for the Naval Aviation Depot (NADEP) Cherry Point, North Carolina. Existing data were examined to aid in understanding the process for determining stabilized rates, workload standards, and workload allocation. Additionally, this research provides an analysis of the inputs to the rate setting process to determine which has the most influence on the financial operating result. A general history of working capital funds is provided and an explanation of the financial and management goals of the Navy Working Capital Fund are spelled out. An assessment of existing methods was based on variance analysis between projected results and actual results. The variance analysis suggests that the current methods used for determining workload standards consistently underestimate the number of hours required to complete the work. Finally a sensitivity analysis was conducted to determine which input variable has the most influence on the net operating result. The sensitivity analysis suggests that changes to workload norms have the most influence on the bottom line at the NADEP.

**KEYWORDS:** Navy Working Capital Fund, Naval Aviation Depot, Net Operating Result, Sensitivity Analysis, Variance Analysis, Stabilized Rate

## **ACQUISITION PLANNING FOR THE ARMED FORCES OF THE PHILIPPINES (AFP) MODERNIZATION PROGRAM**

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The purpose of this thesis is to determine the appropriateness and adequacy of the Armed Forces of the Philippines (AFP) acquisition planning practices to effectively meet the requirements of the AFP Modernization Program (AFPMP). The AFP Modernization Act of 1995 mandated the 15-year modernization of the AFP pursuant to Republic Act (RA) 7898. Consequently, the Department of National Defense (DND) issued Circular No. 1, also known as the Implementing Guidelines, Rules and Regulations (IGRR) to provide the policies and procedures for the AFPMP. Acquisition planning is key to the success of an acquisition because it provides the overall strategy for accomplishing and managing the acquisition. It is a formal documentation of the approach to satisfy the need of the warfighter, optimize resources, and fulfill the policy requirements of the proposed acquisition. In the AFP, planning for acquisitions depends on the Five-Year Rolling Plan, which contains the list of AFPMP projects and form the basis for the formulation of the Circular of Requirements (CORs). The circular does not elaborate on how to develop the CORs or the Bid Evaluation Plans (BEPs), a document similar to the source selection plan. This thesis evaluated AFP acquisition processes to determine the adequacy of AFP acquisition planning practices to adequately meet the needs of the AFPMP. However, the study found that acquisition plans are not even a requirement for the AFPMP projects and it is not mentioned in any of the other attendant documents to RA 7898 or to the IGRR. The study identified other issues that impact on acquisition planning for the AFPMP, which include lack of an acquisition organization, absence of a skilled acquisition workforce, no acquisition category designations for AFPMP projects, and lack of a single, coherent regulation that pertains to AFP weapon system acquisitions. The study then recommended acquisition plans to be a requirement for all AFPMP acquisitions and the adoption of the acquisition plan format in the FAR as a first step to the conduct of acquisition planning for AFPMP projects. With an acquisition plan that provides a logical and systematic approach for meeting the AFP need, the chance of success of AFPMP acquisition projects can be substantially improved.



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**KEYWORDS:** Contract Administration, AFP Modernization Program

## **TWO-SIDED MATCHING FOR THE U.S. NAVY'S ENLISTED DETAILING PROCESS: A COMPARISON OF DEFERRED ACCEPTANCE VERSUS LINEAR PROGRAMMING VIA SIMULATION**

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Recent studies of two-sided matching mechanisms have suggested potential benefits for implementation into the Navy enlisted assignment process. The proposed matching process improves the chance of commands and sailors being assigned either a sailor or billet of their choice. The same studies focused on a particular two-sided Deferred Acceptance (DA) matching algorithm which ensures stable matches, prevents "off-the-site" trades between the matching parties and upholds integrity of the matching system. Although stable matches are important in a voluntary labor market, the DA algorithm may still favor one party depending on whether the command or sailor biased form of the algorithm is used.

The Linear Programming (LP) algorithm is an alternative that could optimize system (command and sailor) effectiveness and promote a balanced approach to meeting the preferences of both parties. Although LP does not guarantee stable matches, it is still employed by selective British hospitals for their matching with interns. The extent of the unstable matches has not been examined to measure it against the benefit of higher system effectiveness. This thesis will evaluate if the LP algorithm could serve as a better alternative to DA algorithm through simulation of the Navy enlisted assignment process.

**KEYWORDS:** Simulation Model, Distribution and Assignment, Two-Sided Matching, Detailing, Personnel Policy Analysis, Placement

## **NAVY FLYING CLUBS: MANAGEMENT, CONTROL SYSTEMS AND PERFORMANCE MEASURES**

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The Monterey Navy Flying Club has undergone tremendous change in the last decade. The club has sustained a painful downsizing due to the closure of Fort Ord and the substantial reduction in number of members, flight hours, aircraft, and staff. During the peak period when Fort Ord was open the volume of members and flight hours allowed informal short-term planning to fulfill all the clubs financial needs. Additionally, the club had an ample supply of surplus military aircraft (T-34Bs and T-41s) along with significant free parts support that allowed extremely low prices which covered all overhead.

Currently, the club has essentially depleted its supply of free parts support (especially engines and propellers) and is now faced with the dilemma of whether or not to keep one T-34B in compliance with an expensive Airworthiness Directive. Now more than ever, this club and other Navy Flying Clubs need objective strategic financial advice on what course of action to pursue.

The clubs current financial control measures do not provide insight into the financial health of the organization. MWR provides financial statements but there is currently no analysis of what the reports are saying. The focus has been on short-term thinking. When the clubs see they have enough money for the next month or two, they cease evaluating their financial position. This has led to clubs disbanding in the worst case and aircraft that are otherwise airworthy being grounded due to insufficient funds to overhaul

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and engine or other maintenance troubles. The club has been living in the short-term management mode for years and is still struggling to settle into its new business environment of fewer members and planes.

All Navy Flying Clubs need to start assessing their maintenance and aircraft replacement needs and budgeting accordingly. In the past, when free planes and parts were the norm the lack of planning had no effect. Today the same method is being used and clubs have no plans to pay for replacement aircraft when the current aircraft become unserviceable.

Monterey Navy Flying Club's focus has remained short term throughout this turbulent period. They have data to analyze, but no method to do so. What is needed is to determine what financial measures can be used to provide an assessment of how the club is performing in the short, medium, and long run.

**KEYWORDS:** Management Control Systems, Performance Measures, DOD

## **TEN YEARS WORTH OF DOD PROCUREMENT REFORMS WITH SPECIFIC ATTENTION TO SELECTED DON PROGRAMS**

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DOD reduced force structure after the Cold War ended. More efficient and sophisticated weapons are necessary to support a smaller force. Acquisition reform legislation is designed to capture savings and usher in a Revolution in Business Affairs. Today a wide array of rogue nations, transnational actors, and domestic terrorism demand weapons procurement reform that is effective against a smaller and much less visible foe. The Department of Defense's goal is to deliver modern, high performance weapons systems at lower cost, on schedule and with higher performance. Better weaponry drives the reality that the nation and the Department find themselves in an era of highly unpredictable security challenges. This research paper explores major procurement reforms and their effect on decreasing the amount of time and funds expended on current and future weapons systems. It looks for evidence of how the Department of the Navy's budget is impacted and what controls, if any, these reforms will have on future weapons procurement. The link between the Executive and legislative branches, DOD and program managers is examined to determine if procurement reform has helped.

**KEYWORDS:** Acquisition, Procurement Reform, MDAP, ACAT, Weapons, Budget

## **SOCIAL FACTORS IMPACTING RECRUITMENT AND RETENTION OF THE CIVILIAN ACQUISITION WORKFORCE**

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This thesis looks at the recruitment and retention challenge facing the DoD's civilian acquisition workforce in light of the demographic gap caused by years of downsizing. It provides a qualitative assessment of the adequacy of existing recruitment and retention tools in light of the generational differences between current policymakers (Baby Boomers) and needed younger employees (Generation-X). Key generational characteristics are compared and assessed in relation to workforce recruitment and retention tools. The research indicates that although a generation gap exists it is not so large that bridges cannot be built. Personnel tools can be modified or created to enable culture change so that Generation-X values are embraced in the workplace. Of the existing tools, flextime, lateral movement and education opportunities, and the demo project appear most promising since they offer individual flexibility and empowerment. Among other things, this thesis recommends to increase internships; advertise career broadening and lateral

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movement opportunities; and centralize all job opportunities to a single site open to all interested applicants. These adjustments will help the DoD address its recruitment and retention goals.

**KEYWORDS:** Recruitment, Retention, Civilian, Acquisition Workforce, Generation-X, Baby Boomer, Demographic

## **PRIORITIZATION OF CAPITAL PROJECTS**

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Public works capital projects in the U.S. Naval forces are not prioritized and funded in a way that best uses limited operations resources and maintenance dollars. This thesis develops a linear model for public works commands to effectively prioritize and fund capital projects. This model allows each command to set its own criteria and weightings which are then used to score and rank capital projects. Using objective criteria, it seamlessly integrates new projects with existing projects into a command's Integrated Project List. The time formerly needed to manually rank each new project against all other projects is saved. Moreover, a command is able to keep a complete and comprehensive list of all unfunded capital projects. The subjectivity inherent in manual project priority decisions is removed. Ways to use existing computer systems in public works commands through Annual Inspection Summary reports are explored. The project decision process was studied through interviews conducted in commands at varying levels of the public works hierarchy. The linear model for project prioritization was developed in Excel. A spreadsheet sample of the linear model and detailed step-by-step instructions for its construction are available upon request from the author. Suggestions are made for further development of the project prioritization process.

**KEYWORDS:** Public Works, Prioritization of Capital Projects, Annual Inspection Summary, Integrated Priority List, Linear Model

## **THE EVALUATION OF APPROPRIATENESS OF OMB CIRCULAR A-76 STUDIES ON REVENUE-GENERATING FUNCTIONS IN DEFENSE WORKING CAPITAL FUND ACTIVITIES**

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This thesis addresses the appropriateness of applying an OMB Circular A-76 study process on the revenue generating functions in Defense Working Capital Fund activities. While the thesis acknowledges that subjecting organizational functions to an A-76 process gains competitive efficiencies, the hypothesis is that a Working Capital Fund activity has already realized the efficiencies by competing for business; therefore, a process other than A-76 is more appropriate to gain further cost savings. The thesis looks at the specific example of the Navy Supply Information Systems Activity (NAVSISA), which is a Fee-for-Service organization that specializes in providing informational technology products and services for U.S. Navy, DoD and Foreign Allies.

**KEYWORDS:** Outsourcing, OMB Circular A-76 Studies, Defense Working Capital Fund, Fee-for-Service, NAVSISA

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## **AN ANALYSIS OF PERSONNEL CAREER DEVELOPMENT PRACTICES WITHIN THE UNITED STATES MARINE CORPS CONTINGENCY CONTRACTING FORCE**

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Increased operational tempo, workforce reductions, and demanding legislation are creating a challenging environment for enlisted personnel serving in the contingency contracting force. Each branch of the U.S. military has responded differently to these challenges. The United States Marine Corps is heavily dependent upon enlisted personnel who are assigned the 3044 Military Occupational Specialty (MOS) to perform contingency contracting. This thesis explores the current environment, within which these contingency contracting Marines operate, and analyzes the affect this environment is having on their career development. The study begins with an examination of the historical development of contingency contracting, and reviews Government commissions that called for reform, which resulted in the establishment of the Defense Acquisition Workforce Improvement Act (DAWIA). The research then describes the requirements levied against contracting personnel under DAWIA and how they affect the enlisted military personnel. With this framework in place the study then evaluates the resulting approach to utilizing enlisted personnel for contingency contracting within the Military Services (Army, Navy, Air Force, Marines). This evaluation focuses on the organizational structure, education opportunities, training, career development, and employment of enlisted personnel within each of these Military Services and how this understanding can improve the career development of 3044s.

**KEYWORDS:** Contracting, Contingency Contracting, Career Development, USMC, Enlisted Personnel, DAWIA, Acquisition, Acquisition Workforce

## **AN ASSESSMENT OF THE IMEF DEPOT-LEVEL CORROSION PREVENTION AND CONTROL PROGRAM AND THE VIABILITY OF MAKING IT MORE EFFICIENT AND/OR OUTSOURCING THE REQUIREMENTS THROUGH PRIVATE SECTOR INITIATIVES**

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**Associate Advisor: Ken Doerr, Graduate School of Business and Public Policy**

In an era of both downsizing of Defense Budgets combined with high operational tempo, the military is faced with doing more with less as a way of life. Add to this the overall rise in the average age of the ground tactical and ground support equipment, and both preventative and corrective maintenance takes on added importance. Corrosion Prevention and Control is a necessity in extending the life of our equipment. This is especially true for the Marine Corps, which operates in harsh environments that quickly degrade its gear. While mandated programs at each echelon of maintenance are technically proficient, the Depot-level program, *to include transportation*, in use by IMEF appears to be inefficient. The objective of this thesis research was to analyze the present program used to meet the Depot-level requirements for the West coast and see if it gives the Corps the Best Value available. Best Value in this case considers both the effect on equipment readiness and overall cost. The present program to protect the assets is efficient and mostly cost effective, yet the transportation procedures are inefficient and not cost effective. This unnecessarily degrades readiness for the war fighter. It is proposed that implementing both the use of organic transportation assets and utilizing outsourcing will greatly improve Readiness levels to IMEF and lower overall program costs.

**KEYWORDS:** Corrosion, Preventative Maintenance, Fifth Echelon Maintenance, Corrosion Prevention and Control, C3 Program, Ground Tactical and Ground Support Equipment Maintenance, U.S. Marine Corps Ground Equipment Maintenance

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## **AN ANALYSIS OF THE REQUISITION PROCESS AND READINESS FOR F/A-18E/F INTEGRATED READINESS SUPPORT TEAM (FIRST) PROGRAM**

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Naval Aviation is beginning a transformation into a new era of logistics support. The beginning of a U.S. Navy/Industry teaming effort started with the U.S. Navy's F/A-18 E/F program. The new aircraft is supported through both standard military logistics programs and a brand new commercial logistics application known as F/A-18 E/F Integrated Readiness Support Teaming (FIRST). The non-traditional contract with Boeing is intended to outsource some of the maintenance, supply and inventory control for the new aircraft onto Boeing. The intended benefits behind the new concept include reduced costs, increased supply responsiveness and greater efficiency through commercial logistics applications. Promising increased aircraft readiness and seamless implementation, both Boeing and U.S. Navy representatives have great expectations for the new system.

This research investigates the impact FIRST is having on F/A-18 E/F Operational Availability (Ao) through an evaluation of Supply Response Times (SRT) and actual squadron Mission Capability Rates for the period of 01 April 2002 through 30 June 2002. Results suggest that although repairable parts are currently delivered quicker through the FIRST program, the contract measurement of SRT may not reflect any long-term improvements in F/A-18 E/F readiness.

**KEYWORDS:** Logistics, F/A-18 E/F, FIRST, Performance Metrics, Readiness, Operational Availability, Outsourcing

## **EXAMINATION OF RELIABILITY MANAGEMENT WITHIN THE MARINE CORPS ACQUISITION PROCESS**

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Combat system reliability is central to creating combat power, determining logistics supportability requirements, and determining systems' total ownership costs, yet the Marine Corps typically monitors only operational availability. While acceptable operational availability may be achieved through intensive maintenance and the stocking of needed repair parts in large quantities, this increases the logistics burden on the combat commander and is costly in terms of personnel, time, and funding.

Data required to compare system reliability requirements in source documents, such as the Operational Requirements Document and the acquisition contract, to achieved reliability of fielded systems is generally not collected, maintained, or available. Contractual obligations to attain system reliability, if any, could not be enforced, and any increase in sustainability costs associated with unmet reliability thresholds is borne by the Marine Corps, draining scarce funding from other priorities.

This research interprets data and perspectives, as collected from a reliability management survey administered to acquisition workforce professionals, and collectively summarizes common inhibitors of effective reliability management, why they occur, lessons learned, and potential methods for mitigating the inherent risks. The results ascertain a variety of technical, programmatic, managerial, incentive, and procedural issues that the Marine Corps encounters concerning system reliability requirements and achievement.

**KEYWORDS:** Reliability, Program Management, Acquisition Management, Life Cycle Cost, Life Cycle Management

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## **ENTERPRISE RESOURCE PLANNING (ERP): A CASE STUDY OF SPACE AND NAVAL WARFARE SYSTEMS CENTER SAN DIEGO'S PROJECT CABRILLO**

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This thesis examines the Enterprise Resource Planning (ERP) pilot implementation conducted at the Space and Naval Warfare Systems Center San Diego (SSC-SD), the first of four Department of the Navy (DON) pilot implementations. Specifically, comparisons are drawn between both successful and unsuccessful ERP implementations within private sector organizations and that of SSC-SD. Any commonalities in implementation challenges could be applied to future ERP implementations in both the DON and Department of Defense (DOD).

The findings are based in part upon interviews and data collected. From the comparison, commonalities exist in ERP implementation challenges between private sector organizations and SSC-SD. Additionally the management techniques used to mitigate those challenges are similar. Finally, due to SSC-SD's financial management structure and appropriated funding constraints, unique obstacles were identified during the implementation. These unique obstacles will be encountered by other Working Capital Funded (WCF) organizations planning to implement ERP on the same scale as SSC-SD. This thesis supports that the implementation of ERP at SSC-SD was a success based on industry comparisons, the goals of Project Cabrillo's business case analysis (BCA), and its Chief Financial Officer (CFO) Act compliancy assessment, January 2002.

**KEYWORDS:** Enterprise Resource Planning, Financial Management, Project Cabrillo, Space and Naval Warfare Systems Center San Diego, SSC-SD

## **A COMPARATIVE ANALYSIS OF LEADERSHIP SKILLS DEVELOPMENT IN MARINE CORPS TRAINING AND EDUCATION PROGRAMS**

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This thesis analyzes the perceptions of a non-random sample of 210 officers and enlisted Marines in two locations. A researcher-developed survey and semi-structured interviews were administered to ascertain opinions of Marines concerning leadership development. An analysis of the content of leadership training and education courses was also conducted. This information was compared to contemporary leadership theory and relevant models of leadership. In general, leadership development provided is adequate, but is lacking in some areas of skill development, application of skills and values, and relevancy to contemporary leadership issues. Professional Military Education (PME) generally provides relevant leadership training and education to enlisted personnel, but falls short of meeting the expectations of many officers.

**KEYWORDS:** Leadership, Core Values, Leadership Training and Education, Professional Military Education

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## **THE EXPORT ADMINISTRATION ACT OF 1979 AND COMPUTER EXPORTS TO THE PEOPLE'S REPUBLIC OF CHINA (PRC)**

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The importance of computers to the U.S. military and national defense is significant and multifaceted. The statute that regulates computer exports, the Export Administration Act of 1979 (EAA79), has been interpreted both strictly and loosely by policymakers, executive agencies, and export control regimes. The result has been a persistent struggle in balancing the competing interests of national security and commerce. An urgent need exists to rewrite EAA79, yet Congress has not been able to come to a consensus due to overlapping and conflicting committee interests within and across the chambers. While Congress continues to debate rewriting EAA79, the President has been able to adjust the impact of U.S. export control laws on foreign countries, utilizing export controls as means of advancing U.S. foreign policy abroad. In the case of the People's Republic of China, the White House has loosened export controls for high-performance computers to that country in order to encourage free trade and private enterprise.

**KEYWORDS:** Exports, Export Administration Act of 1979, Export Administration Act, Export Controls, Technology Transfer, Nonproliferation, Competitiveness, Multilateral Export Control Regimes, People's Republic of China, High-performance Computers, Computers

## **AN ANALYSIS OF THE COMMON MISSILE AND TOW 2B ON THE STRYKER ATGM PLATFORM, USING THE JANUS SIMULATION**

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The U.S. Army is beginning to field the first of six Stryker Brigade Combat Teams (SBCTs) and equip the organic Anti-Tank (AT) Company of the Brigade with the LAV III Anti-Tank Guided Missile (ATGM) Platform and the Tube-Launched, Optically-Tracked, Wire-Guided 2B (TOW 2B) missile system. A developmental effort is currently underway to replace the aging TOW 2B and Hellfire missile systems with a common missile that meets both ground and air requirements. With increased range, lethality, and target acquisition capability, the Common Missile (CM) is being designed as the primary weapon system for the Army's Comanche helicopter and is a candidate for the lethality system of the Future Combat System (FCS) within the Army's Objective Force. Additionally, the CM is designed to be "backwards compatible" with existing TOW 2B and Hellfire launch platforms. The objective of this research effort is to determine the increase in operational effectiveness through the employment of the CM in the AT company of the SBCT in three different scenarios, using the high-resolution Janus Combat Model. Operational effectiveness will be assessed and statistically analyzed using lethality, survivability, and engagement range for three measures of effectiveness (MOEs).

**KEYWORDS:** Anti-Tank Guided Missile (ATGM), Army Transformation, Common Missile, Interim Brigade Combat Team (IBCT), Janus, Light Armored Vehicle III (LAV III), Modeling and Simulation, Stryker Brigade Combat Team (SBCT), TOW 2B Missile

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## **BUDGET PREPARATION, EXECUTION AND METHODS AT THE MAJOR CLAIMANT/BUDGET SUBMISSION OFFICE LEVEL**

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**Associate Advisor: John E. Muttly, Graduate School of Business and Public Policy**

This thesis describes the current Planning, Programming, and Budgeting System (PPBS) process at a Navy Major Claimant/Budget Submitting Office (BSO) by examining the overall navy processes and the process employed at a major claimant/BSO, COMPACFLT (CPF). The thesis begins by describing the scope of the Planning, Programming, and Budgeting requirements at CPF by describing its Area of Responsibility (AOR) and the major sub-claimants who rely on CPF for program and budget submissions and subsequent allocation of resources. The thesis then describes the current Navy PPBS process, the process at CPF, and the interactions that occur between the two. Next, the thesis describes and analyzes the concurrent program/budget process implemented by the Secretary of Defense in August 2001 and the perceptions among CPF staff for the reasoning behind the change. The thesis also examines the differences in funding between readiness accounts that directly support operating forces and support accounts that provide resources to the infrastructure account that supports those forces. Finally, the thesis discusses the intricate, yet reiterative nature of the process and the informal PPBS process that occurs between participants on a day-to-day basis. This thesis was prepared by reviewing current documentation of the PPBS process and by conducting interviews with key members of the CPF planning, programming and budgeting staffs.

**KEYWORDS:** Planning Programming and Budgeting System (PPBS), Capability Plans (CP), Integrated Warfare Architectures (IWAR), Budget

## **AN ANALYSIS OF ELECTRONIC COMMERCE ACQUISITION SYSTEMS: COMPARISON OF A NEW PURE ELECTRONIC PURCHASING AND EXCHANGE SYSTEM (ELECTRONIC STOREFRONT) AND OTHER LEGACY ON-LINE PURCHASING SYSTEMS**

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**Second Reader: CDR James Barnard, USN, Graduate School of Business and Public Policy**

This research will evaluate purchasing problems and issues in current on-line contracting/procurement programs including GSA Advantage, DoD E-Mall, and other current on-line purchasing programs as they relate to contracting and purchasing of supplies and services. The issues and concerns with legacy on-line procurement systems will be compared to a newly developed Pure Electronic Ordering System (Electronic Storefront) recently developed by Professor Ron Tudor and students at the Naval Postgraduate School. This new program is currently under testing by a prime contractor under the auspices of the Department of Interior. The new on-line contracting/procurement program will allow Federal, State and Local Government users to purchase supplies and services on-line through the use of the Internet, through the use of electronic catalogs and embedded contract templates. This thesis will consider some of the functions of the new program and how the new program addresses the issues and concerns identified under the current legacy on-line procurement programs as well as additional benefits the new program will encompass compared to legacy systems.

**KEYWORDS:** Procurement, E-commerce, E-procurement



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## **AN ANALYSIS OF CURRENT AND PROPOSED OVERSIGHT PROCESSES FOR THE ACQUISITION OF LARGE-SCALE SERVICES AS SEEN THROUGH THE EYES OF THE NAVY MARINE CORPS INTRANET PROGRAM**

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At approximately \$6.9 billion, the Navy-Marine Corps Intranet (NMCI) was the largest service contract that DoD had ever awarded. The U.S. Navy viewed it as a typical multi-year, Performance Based Services Contract (PBSC) and not a new acquisition program. Congress took a different view. Congress attached milestones, conditions, a requirement for rigorous testing and limited funding. This all had the effect of delaying the implementation of NMCI. At approximately \$60 billion per year and growing, acquisition of services is a major part of DoD acquisitions and it is expected to only grow in the future. The mechanics for implementing these types of acquisitions are well understood; the U.S. Navy's experience with NMCI suggests that the amount and type of oversight required are not as well defined. Realizing this, both DoD and the U.S. Congress are scrambling to create laws and policies to bridge this gap. The commercial section has considerable experience in this area, as acquisition of services is a growing endeavor there too. This thesis examines current and proposed policy and procedures for the oversight of the acquisition of large-scale services by the DoD, along with a brief analysis of and comparison to other best practices regarding service acquisition.

**KEYWORDS:** Acquisition of Services, Navy-Marine Corps Intranet (NMCI), Performance Based Services Acquisition (PBSA), Performance Based Services Contracts (PBSC), Services Acquisition Reform Act (SARA), Services Contracts Oversight Process (SCOP), Contracting

## **COSTS AND BENEFITS OF USING FUEL CELL FOR STATIONARY POWER GENERATION AT MARINE CORPS LOGISTICS BASE BARSTOW**

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The costs and benefits of using two types of fuel cell power generation systems versus Southern California Edison to provide the base electricity load for the Marine Corps Logistics Base Barstow Maintenance Center are compared. The results indicate that the break-even point is not likely to occur before year eight and under certain conditions may not occur at all during the 20-year program life cycle. The results do indicate a pollution reduction from fuel cells, but the reduction would not have any measurable impact on the nation's air quality.

**KEYWORDS:** Fuel Cell, Electricity, Power Generation, Barstow, Deregulation, California

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## **THE STRATEGIC DISTRIBUTION MANAGEMENT INITIATIVE AND ITS EFFECTS ON INVENTORY LEVELS AND READINESS**

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Until just a few years ago, no organization was tasked with measuring overall effectiveness, design, or optimization of DOD's global supply chain management system. As a result, the Strategic Distribution Management Initiative (SDMI) was created as a joint venture between Defense Logistics Agency (DLA) and the United States Transportation Command (USTRANSCOM) charged with enterprise level redesign, streamlining, and optimization of the DOD global supply chain. This thesis examines the affects of the SDMI implementation on the Army's two maneuver divisions stationed in the Europe. Specifically, it analyzes affects of SDMI implementation on the eight supply support activities located within the two maneuver divisions in USAREUR.

This thesis studies SDMI impacts on inventory levels; inventory turbulence in the SSAs during SDMI implementation; SDMI improvements with respect to readiness; and existing barriers to improving velocity. The research indicates that: (1) expected inventory reductions were not realized following SDMI implementation, (2) inventory turbulence consumes limited resources and is a lucrative target for further improvement, (3) there is no evidence that SDMI increased fleet readiness, and (4) backorder rates and time, along with sub-optimization of pieces of the DOD supply chain, are significant barriers to velocity that still must be broken through.

**KEYWORDS:** Strategic Distribution Management Initiative, SDMI, Defense Logistics Agency (DLA), United States Transportation Command, USTRANSCOM, Logistics

## **THE HORIZON OF FINANCIAL MANAGEMENT FOR THE DEPARTMENT OF DEFENSE**

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The Department of Defense (DOD) has been unable to complete a financial audit since the enactment of the Accounting and Auditing Act of 1950, requiring periodic audits of all federal agencies. With corporate accounting scandals such as Enron, WorldCom and Xerox fresh in America's mind, Congress has given high priority to examining DOD's financial management situation, their plans for improvement, and ensuring taxpayer money can be accounted for throughout the department. This thesis will examine the root causes behind DOD's perceived wasteful culture, failed attempts to remedy the situation, the top 10 obstacles impeding proper financial management, and the outlook for attaining and passing an audit based on current strategy. In addition, this thesis will analyze the complexity of DOD budget execution and why budgets are rarely executed as written. With a slowing economy and other federal departments forced to do more with less, a more efficient financial structure could free billions of dollars.

**KEYWORDS:** Financial Management, Department of Defense, Budget Execution

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## **AN ANALYSIS OF THE DEPARTMENT OF THE AIR FORCE, ARMY, AND NAVY BUDGET OFFICES AND BUDGET PROCESSES**

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The objective of each of the budget offices of the Departments of the Air Force, Army, and Navy is to create a budget request to be submitted to the Secretary of Defense for incorporation in the President's budget. The primary objective of this thesis is to familiarize the reader with the composition and responsibilities of these budget offices in order to demonstrate how they meet this objective. The focus of this thesis will be on the Department of the Navy and the subordinate of the two services of which it is composed, the Marine Corps. This thesis will use a macro to micro process providing an overview of the Planning, Programming, and Budgeting System at the Department of Defense level, a summary of each department's budget office to include their composition and responsibilities, a description of the appropriation processes of the Department of the Navy and a summation of the Marine Corps budgetary process. This process will ensure that the reader sees how a budget is developed, on all levels, from the all-encompassing DOD to the smallest of the services the Marine Corps. The process described in this thesis reflects the timelines in place prior to August 2001. Although the timelines have changed, the process remains essentially the same.

**KEYWORDS:** Planning, Programming, and Budgeting System (PPBS), Budget Offices, Department of the Navy Appropriations, Marine Corps Program Objective Memorandum (POM)

## **ANALYSIS OF FOR-PROFIT COMMERCIAL FIRM PARTICIPATION IN TECHNOLOGY INVESTMENT AGREEMENTS**

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In this thesis, data provided in a 1999 Inspector General Audit on "other transactions" as well as Dual Use Science and Technology (DU S&T) Program projects from 1997 through 2001 are analyzed. Technology Investment Agreements (TIAs) were found to have attracted for-profit commercial firms that normally do not do business with the Government into participating in research projects with the Department of Defense (DoD). The average for-profit commercial firm participation rate of DU S&T projects was found to be 26.2 percent. A sample TIA and a sampling of DU S&T project participants are included as appendices.

**KEYWORDS:** Technology Investment Agreement, Other Transactions, Non-traditional Defense Suppliers

## **ANALYSIS OF CHARACTERISTICS IN THE DEFENSE SUPPLEMENTAL APPROPRIATIONS**

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The supplemental appropriation may be used as a budgetary tool for funding requirements. This study examined how the supplemental affected the Department of Defense (DoD) from fiscal year 1996 to fiscal year 2000. Furthermore, it examined the nature of the supplemental by studying its characteristics. Defense budgetary spending caps mandate that supplemental spending remain under certain limits. However, the use of the "emergency" designation has been a useful tool in expanding the amount of funds

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that the DoD may utilize. During the time of this study, the supplemental grew both in amounts and in the usage of the contingent emergency designation. In some cases, the President initiated supplemental spending, but in the latter years, it appeared that Congress took the lead. Furthermore, the need for supplementals went beyond one-time expenditures. Supplemental funding became a need to ensure readiness while the number of requirements grew and the emergency designation helped to make that possible.

**KEYWORDS:** Supplemental Appropriations, Emergency Appropriations, Rescissions, Budget Strategy